

## TENT COOPERATION TRE Y

From the INTERNATIONAL BUREAU

PCT

NOTIFICATION OF ELECTION  
(PCT Rule 61.2)

Date of mailing (day/month/year) 30 October 2000 (30.10.00)
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To:

Commissioner  
US Department of Commerce  
United States Patent and Trademark  
Office, PCT  
2011 South Clark Place Room  
CP2/5C24  
Arlington, VA 22202  
ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

International application No. PCT/IL00/00056	Applicant's or agent's file reference 110/01357
International filing date (day/month/year) 27 January 2000 (27.01.00)	Priority date (day/month/year) 27 January 1999 (27.01.99)
Applicant GLOBERMAN, Oren et al	

1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

28 August 2000 (28.08.00)

in a notice effecting later election filed with the International Bureau on:

\_\_\_\_\_

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO  
34, chemin des Colombettes  
1211 Geneva 20, Switzerland

Authorized officer

Manu Berrod

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

RECEIVED

- 2 -05- 2001

FENSTER & Co.

PCT

## NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Rule 71.1)

To:	
Fenster, Paul <b>FENSTER &amp; COMPANY PATENT ATTORNEYS, LTD</b> P.O.Box 10256 Petach Tikva 49002 ISRAEL	

Date of mailing  
(day/month/year) 24.04.2001

Applicant's or agent's file reference 110/01357		<b>IMPORTANT NOTIFICATION</b>	
International application No. PCT/IL00/00056	International filing date (day/month/year) 27/01/2000	Priority date (day/month/year) 27/01/1999	
Applicant DISC-O-TECH MEDICAL TECHNOLOGIES, LTD. et al.			

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

#### 4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Ertl, L  Tel. +49 89 2399-7447
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# PATENT COOPERATION TREATY

## PCT

### INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 110/01357	<b>FOR FURTHER ACTION</b>		See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/IL00/00056	International filing date (day/month/year) 27/01/2000	Priority date (day/month/year) 27/01/1999	
International Patent Classification (IPC) or national classification and IPC A61F2/46			
<b>Applicant</b> DISC-O-TECH MEDICAL TECHNOLOGIES, LTD. et al.			
1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.			
2. This REPORT consists of a total of 9 sheets, including this cover sheet.			
<input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).			
These annexes consist of a total of 1 sheets.			
3. This report contains indications relating to the following items:			
I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input checked="" type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input checked="" type="checkbox"/> Certain documents cited VII <input checked="" type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application			

Date of submission of the demand 28/08/2000	Date of completion of this report 24.04.2001
Name and mailing address of the international preliminary examining authority:   European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer  Josten, S Telephone No. +49 89 2399 2338



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IL00/00056

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):  
**Description, pages:**

1-25                   as originally filed

**Claims, No.:**

9-99                   as originally filed

1-8                   as received on                   30/08/2000 with letter of                   28/08/2000

**Drawings, sheets:**

1/26-26/26           as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/IL00/00056

the description,      pages:

the claims,      Nos.:

the drawings,      sheets:

5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

## III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been examined in respect of:

the entire international application.

claims Nos. 73-89.

because:

the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):

the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

no international search report has been established for the said claims Nos. 73-89.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

the written form has not been furnished or does not comply with the standard.

the computer readable form has not been furnished or does not comply with the standard.

## IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/IL00/00056

- restricted the claims.
  - paid additional fees.
  - paid additional fees under protest.
  - neither restricted nor paid additional fees.
2.  This Authority found that the requirement of unity of invention is not complied and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
  - complied with.
  - not complied with for the following reasons:  
**see separate sheet**
4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:
- all parts.
  - the parts relating to claims Nos. 1-72, 90-99.

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes:	Claims 1-72, 96
	No:	Claims 90, 91, 92, 94
Inventive step (IS)	Yes:	Claims 1-72, 96
	No:	Claims 93, 95, 97, 98, 99

Industrial applicability (IA)

Yes:	Claims 1-72, 90-99
No:	Claims

2. Citations and explanations  
**see separate sheet**

**VI. Certain documents cited**

1. Certain published documents (Rule 70.10)

and / or

2. Non-written disclosures (Rule 70.9)

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**see separate sheet**

**VII. Certain defects in the international application**

The following defects in the form or contents of the international application have been noted:  
**see separate sheet**

**VIII. Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:  
**see separate sheet**

**Relevant**

**Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Claim 1 relates to an apparatus for controlling the deformation of an implant during deployment thereof. None of the documents cited in the search report discloses a force application mechanism for applying deforming force to the implant, by axial motion of a force applicator against the implant. The documents US-A-5759186 (=D1), US-A-5782838 and US-A-5683451 each describe self-expanding implants and there is therefore no need for applying a deforming force to the implant.

Thus, claim 1 appears to meet the requirements of Articles 33(2) and 33(3) PCT.

2. Claims 2 to 72 are dependent from claim 1 and relate to preferred embodiments of the apparatus according to claim 1. Thus, claims 2 to 72 also appear to meet the requirements of Articles 33(2) and 33(3) PCT.
3. As to independent claim 90, the document US-A-5171248 (=D2) is considered to represent the closest prior art.

D2 discloses (see figure 4) a measurement apparatus for taking measurements inside the body (see column 1, lines 56 to 58), comprising:  
a hollow tube 12, defining at least one slot 24, 26 at its end;  
a shaft 28 disposed within said tube 12; and  
at least one wing 32, 34 coupled to said shaft 28 and adapted to extend through said slot 24, 26, wherein an extension position of said wing 32, 34 determines an axial motion of said shaft in said tube,  
wherein said apparatus is adapted to come in contact with body fluids and  
wherein said apparatus is sterile.

Thus, all features of claim 90 are known from D2 and the claim, therefore, does not meet the requirements of Article 33(2) PCT.

4. The features of claims 91, 92, and 94 are also known from D2. Thus, claims 91,

92 and 94 do not meet the requirements of Article 33(2) PCT.

5. The features of claims 93, 95 and 97 to 99 cannot be seen as involving an inventive step since they relate to slight constructional changes of the apparatus known from **D2** which come within the scope of the customary practice followed by persons skilled in the art. Thus, claims 93, 95 and 97 to 99 do not meet the requirements of Article 33(3) PCT.
6. The features of claim 96 cannot be derived from the available documents. Thus, Claim 96 and claims being dependent therefrom appear to meet the requirements of Articles 33(2) and 33(3) PCT. However, reference is made to item VIII, paragraph 11.

**Re Item VI**

**Certain documents cited**

7. The priority 27.01.99 claimed by the present application has not been checked. The document WO-A-9939661 (filing date 05.02.99; priority date 05.02.98; publication date 12.08.99) is of particular relevance. The document WO-A-952446 (filing date 09.04.99; priority dates 09.04.98 and 27.10.98; publication date 21.10.99) is not considered to be of particular relevance.

**Re Item VII**

**Certain defects in the international application**

8. The application does not meet the requirements of Rule 6.3(b) PCT since the independent claims should have been properly cast in the two-part form, with those features which in combination are known from **D1** being placed in the preamble of claim 1 and with those features which in combination are known from **D2** being placed in the preamble of claim 90.
9. The application does not meet the requirements of Rule 6.2(b) PCT since reference signs in parentheses should have been inserted in the claims to

increase their intelligibility. This applies to both the preambles and characterising portions.

10. The application does not meet the requirements of Rule 5.1(a)(ii) PCT since documents **D1** and **D2** should have been cited in the description and the relevant background art disclosed therein should have been briefly discussed.

**Re Item VIII**

**Certain observations on the international application**

11. Claim 1 is not fully supported by the description (Article 6 PCT) since it is not clear which features shown in the figures or mentioned in the description do form the force application mechanism and the synchronizer cited in claim 1.
12. As can be seen from figures 5A to 5C and from the description on page 16, line 20, wings 208 form a parallelogram. Thus, claim 96 should be clarified (Article 6 PCT) by stating that **two wings (208)** define a parallelogram.

**Re Item III**

**Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

13. The present application contains the following two inventions:
  - a) the apparatus for controlling the deformation of an implant according to claim 1, followed by dependent claims 2 to 72, and
  - b) the measurement apparatus for taking measurements inside the body according to independent claim 90, followed by dependent claims 91 to 99.

These two inventions are not so linked that they form a single general inventive concept. The single general inventive concept linking the inventions according to different claims can be defined by the common features of those claims. However, in the present case there are no common features in independent claims 1 and

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT - SEPARATE SHEET**

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International application No. PCT/IL00/00056

90. Consequently, there is no common concept linking these claims. Thus, the application does not comply the requirements of unity of invention.

**CLAIMS**

1. Apparatus for controlling the deformation of an implant during deployment thereof, comprising:

5 a force application mechanism for applying deforming force to the implant, by axial motion of a force applicator against the implant; and

a restraint element positioning mechanism that positions a restraining element such that the deformation of the implant is controlled by restraint of the restraining element on allowable deformation; and

10 a synchronizer that synchronizes the motion of the restraining element and the force applicator, to achieve a desired deformation of the implant.

2. Apparatus according to claim 1, comprising a force input which receives continuous motion and couples it to the force application mechanism and to the restraint element 15 positioning mechanism.

3. Apparatus according to claim 2, wherein said continuous motion is reciprocating motion.

20 4. Apparatus according to claim 3, wherein said restraint positioning mechanism moves said restraint element during one stroke of said reciprocating motion.

5. Apparatus according to claim 4, wherein said one stroke comprises a retraction of said restraint mechanism from said implant.

25 6. Apparatus according to any of claims 3-5, wherein said force application mechanism moves said force applicator during one stroke of said reciprocating motion.

7. Apparatus according to claim 6, wherein said one stroke comprises a retraction of said 30 force applicator from said implant.

8. Apparatus according to claim 6, wherein said one stroke comprises an advance of said force applicator towards said implant.

PARENT COOPERATION TREATY  
PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>110/01357</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/ IL 00/ 00056</b>	International filing date (day/month/year) <b>27/01/2000</b>	(Earliest) Priority Date (day/month/year) <b>27/01/1999</b>
Applicant <b>DISC-O-TECH MEDICAL TECHNOLOGIES, LTD. et al.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of **6** sheets.

It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report
  - a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
    - the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
  - b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing :
    - contained in the international application in written form.
    - filed together with the international application in computer readable form.
    - furnished subsequently to this Authority in written form.
    - furnished subsequently to this Authority in computer readable form.
    - the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
    - the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished
2.  Certain claims were found unsearchable (See Box I).
3.  Unity of Invention is lacking (see Box II).
4. With regard to the title,
  - the text is approved as submitted by the applicant.
  - the text has been established by this Authority to read as follows:
5. With regard to the abstract,
  - the text is approved as submitted by the applicant.
  - the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.
6. The figure of the drawings to be published with the abstract is Figure No.
  - as suggested by the applicant.
  - because the applicant failed to suggest a figure.
  - because this figure better characterizes the invention.

8a

None of the figures.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IL 00/00056

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: 73-89 because they relate to subject matter not required to be searched by this Authority, namely:  
**Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery**
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

**FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-72

An apparatus for controlling the deformation of an implant during deployment.

2. Claims: 90-99

A measurement apparatus for taking measurements inside the body.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IL 00/00056

**A. CLASSIFICATION OF SUBJECT MATTER**  
**IPC 7 A61F2/46**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

**IPC 7 A61F A61B G01B**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**EPO-Internal**

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 759 186 A (BACHMANN MICHEL ET AL) 2 June 1998 (1998-06-02)  column 4, line 15 -column 5, line 5 column 5, line 48 -column 6, line 32 column 6, line 51 - line 64	1-8,11, 12,15, 17,18, 22,34, 35,37, 39,40, 42, 47-49, 58,68
Y	----- -/--	67

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

22 August 2000

Date of mailing of the international search report

29.08.2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl.  
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Authorized officer

Mary, C

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/IL 00/00056

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y ✓	US 5 059 193 A (KUSLICH STEPHEN D) 22 October 1991 (1991-10-22) figures 1-23 column 3, line 30 - line 60 column 4, line 59 -column 5, line 49 column 8, line 6 - line 14 column 8, line 42 -column 10, line 11 claims 1-15 ---	67
X ✓	US 5 782 838 A (BEYAR MORDECHAY ET AL) 21 July 1998 (1998-07-21)  figures 1,5-9 column 1, line 66 -column 2, line 29 column 3, line 12 - line 67 ---	1,2,12, 15,17, 18,22, 23,34, 35,37, 38,40, 41, 47-54,58
A ✓	 figures 1-10 column 6, line 29 - line 60 column 7, line 6 -column 8, line 10 column 8, line 54 -column 9, line 41 ---	3-11,13, 14,20, 21,24,25
X ✓	US 5 683 451 A (GLYNN BRIAN ET AL) 4 November 1997 (1997-11-04)  figures 1-10 column 6, line 29 - line 60 column 7, line 6 -column 8, line 10 column 8, line 54 -column 9, line 41 ---	1,2,15, 17, 34-37, 40, 47-53, 69-72
A ✓	 ---	54-57
P,X ✓	WO 99 39661 A (MEDTRONIC INC) 12 August 1999 (1999-08-12) figures 13-17 page 27, line 4 -page 33, line 28 ---	1
A ✓	US 5 697 977 A (PISHARODI MADHAVAN) 16 December 1997 (1997-12-16) the whole document ---	1
A ✓	US 5 356 382 A (GELBKE JIM ET AL) 18 October 1994 (1994-10-18) figures 1-3 column 5, line 46 -column 6, line 50 ---	90
A ✓	EP 0 044 877 A (KURZ KARL HEINZ ;GUTIERREZ JAVIER DIPL ING (DE)) 3 February 1982 (1982-02-03) figures 2,3 claim 1 ---	90

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/IL 00/00056

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A ✓	US 5 171 248 A (ELLIS JOHN G) 15 December 1992 (1992-12-15) figures 1-4 column 2, line 39 -column 3, line 50 ---	90
P,A ✓	WO 99 52446 A (RODTS GERALD E JR ;SDGI HOLDINGS INC (US); ESTES BRADLEY T (US); H) 21 October 1999 (1999-10-21) figures 21-24 page 17, line 11 -page 18, line 10 -----	90

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL 00/00056

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5759186	A	02-06-1998	SE 503249 C US 5591172 A US 5954729 A AT 128849 T AU 650542 B AU 1823592 A CA 2071120 A DE 9207942 U DE 69205340 D DE 69205340 T EP 0518838 A ES 2078021 T IE 69545 B JP 6197984 A SE 9101841 A	29-04-1996 07-01-1997 21-09-1999 15-10-1995 23-06-1994 17-12-1992 15-12-1992 26-11-1992 16-11-1995 18-04-1996 16-12-1992 01-12-1995 18-09-1996 19-07-1994 15-12-1992
US 5059193	A	22-10-1991	NONE	
US 5782838	A	21-07-1998	AU 700717 B AU 3967995 A CA 2203122 A EP 0794726 A JP 10507090 T WO 9612436 A	14-01-1999 15-05-1996 02-05-1996 17-09-1997 14-07-1998 02-05-1996
US 5683451	A	04-11-1997	DE 69514589 D EP 0696447 A EP 0948946 A EP 0943302 A JP 8173548 A US 6024763 A US 5824041 A DE 29522101 U EP 0686379 A EP 0792627 A EP 1010406 A JP 8052165 A	24-02-2000 14-02-1996 13-10-1999 22-09-1999 09-07-1996 15-02-2000 20-10-1998 09-12-1999 13-12-1995 03-09-1997 21-06-2000 27-02-1996
WO 9939661	A	12-08-1999	EP 0971647 A	19-01-2000
US 5697977	A	16-12-1997	US 6093207 A US 5658336 A AU 6090096 A CA 2222025 A CN 1192669 A EP 0830116 A JP 11510405 T WO 9640016 A US 5653762 A AU 2186795 A CA 2185460 A DE 69514337 D DE 69514337 T EP 0750482 A WO 9525487 A US 5653761 A US 5601556 A US 5893890 A	25-07-2000 19-08-1997 30-12-1996 19-12-1996 09-09-1998 25-03-1998 14-09-1999 19-12-1996 05-08-1997 09-10-1995 28-09-1995 10-02-2000 27-07-2000 02-01-1997 28-09-1995 05-08-1997 11-02-1997 13-04-1999

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IL 00/00056

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EP 0044877	A 03-02-1982	DE	3070268 D	18-04-1985
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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## **INTERNATIONAL SEARCH REPORT**

Int'l Application No.

PCT/IL 00/00056

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 A61F2/46

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
**IPC 7 A61F A61B G01B**

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 759 186 A (BACHMANN MICHEL ET AL) 2 June 1998 (1998-06-02)	1-8, 11, 12, 15, 17, 18, 22, 34, 35, 37, 39, 40, 42, 47-49, 58, 68
Y	column 4, line 15 -column 5, line 5 column 5, line 48 -column 6, line 32 column 6, line 51 - line 64	67

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

- Special categories of cited documents :
  - "A" document defining the general state of the art which is not considered to be of particular relevance
  - "E" earlier document but published on or after the international filing date
  - "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
  - "O" document referring to an oral disclosure, use, exhibition or other means
  - "P" document published prior to the international filing date but later than the priority date claimed

- \*<sup>T</sup> later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
  - \*<sup>X</sup> document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
  - \*<sup>Y</sup> document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
  - \*<sup>&</sup> document member of the same patent family

Date of the actual completion of the international search  22 August 2000	Date of mailing of the international search report  29.08.2000
Name and mailing address of the ISA  European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl. Fax: (+31-70) 340-3016	Authorized officer  Mary, C

**INTERNATIONAL SEARCH REPORT**

Int'l Application No

PCT/IL 00/00056

**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5 059 193 A (KUSLICH STEPHEN D) 22 October 1991 (1991-10-22) figures 1-23 column 3, line 30 - line 60 column 4, line 59 - column 5, line 49 column 8, line 6 - line 14 column 8, line 42 - column 10, line 11 claims 1-15 ---	67
X	US 5 782 838 A (BEYAR MORDECHAY ET AL) 21 July 1998 (1998-07-21)  figures 1,5-9 column 1, line 66 - column 2, line 29 column 3, line 12 - line 67 ---	1,2,12, 15,17, 18,22, 23,34, 35,37, 38,40, 41, 47-54,58
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X	US 5 683 451 A (GLYNN BRIAN ET AL) 4 November 1997 (1997-11-04)  figures 1-10 column 6, line 29 - line 60 column 7, line 6 - column 8, line 10 column 8, line 54 - column 9, line 41 ---	1,2,15, 17, 34-37, 40, 47-53, 69-72
A		54-57
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**INTERNATIONAL SEARCH REPORT**

International Application No

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**C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

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## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IL 00/00056

### Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: 73-89 because they relate to subject matter not required to be searched by this Authority, namely:  
**Rule 39.1(iv) PCT - Method for treatment of the human or animal body by surgery**
2.  Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box II Observations where unity of Invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

#### Remark on Protest

- The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

## **INTERNATIONAL SEARCH REPORT**

International Application No. PCT/IL 00/00056

### **FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210**

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

**1. Claims: 1-72**

An apparatus for controlling the deformation of an implant during deployment.

**2. Claims: 90-99**

A measurement apparatus for taking measurements inside the body.

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

Int'l Application No  
**PCT/IL 00/00056**

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